Chapter 4
Emergency Response Accomplishments

Throughout the 11-year history of Superfund, the emergency response and removal program has successfully prevented and minimized threats to human health and the environment. Through FY92, EPA and potentially responsible parties (PRPs) have initiated more than 3,040 removal actions to address threats posed by the release or threatened release of hazardous substances.

This chapter discusses the removal action process, the progress achieved under the Superfund removal program in addressing immediate threats to human health and the environment, the contributions of the Environmental Response Team (ERT), and emergency response guidance and rulemaking development.

4.1 The Removal Action Process

Removal actions are taken in response to a release or threat of release of a hazardous substance that presents an immediate or near-term threat to human health, welfare, or the environment. Examples of situations that might warrant a removal action include chemical spills or fires at production or waste storage facilities, transportation accidents involving hazardous substances, and illegal disposal of hazardous waste (midnight dumping). Exhibit 4.1-1 presents examples of the kinds of threats that might be posed by these situations and the corresponding removal actions that might be taken. Managed by a federal On-Scene Coordinator (OSC), a removal action is generally short-term, addresses the most immediate threats, and complies with applicable or relevant and appropriate requirements (ARARs) to the extent practicable given the exigencies of the situation.

When notified of a release or threat of release that might require a removal action, the Agency conducts a removal site evaluation to determine the source and nature of the release, the threat to public health and the environment, and whether an appropriate response has been initiated. The Agency reviews the results of the removal site evaluation and other factors to determine the appropriate extent of a removal. At any point in this process, the Agency might refer the action to the site assessment program or determine that no further remedial action is necessary. When the Agency concludes that a removal action is required, the appropriate response is implemented to minimize or eliminate the threat.

The removal program categorizes removal actions based on the time available before a response action must be initiated. "Emergency" removal actions require response at the site within hours. "Time-critical" removal actions are conducted when the lead agency concludes that the action must begin within six months. For "non-time-critical" removal actions, the planning period may extend more than six months before the removal action is begun. During this planning period, the lead agency conducts an engineering evaluation/cost analysis for the response action.

Acronyms Referenced in Chapter 4

ARAR	Applicable or Relevant and Appropriate Requirement
ERRS	Emergency and Rapid Response Services
ERT	Environmental Response Team
MIC	Methyl Isocyanate
NPL	National Priorities List
OSC	On-Scene Coordinator
PRP	Potentially Responsible Party
RCRA	Resource Conservation and Recovery Act
RQ	Reportable Quantity
SACM	Superfund Accelerated Clean-Up Model

To document the selection of a response action for a removal, the Agency prepares an action memorandum that states the authority for initiating the action, describes the action to be taken, and explains the basis for selecting the response. EPA also establishes an administrative record, compiling the documents that formed the basis for the selection of the response action.

The following sections discuss other key aspects of the removal action process, including community participation, the role of the OSC, and CERCLA limitations on the scope of removal actions.

Community Participation in Removal Actions

The removal process provides many opportunities for public participation. The Agency appoints an official spokesperson to keep the public abreast of the progress of a given removal action. The administrative record may be made available at a repository near the site and at EPA offices. If the removal action is expected to continue beyond 120 days, the lead agency must involve local officials and other parties in the process.

The On-Scene Coordinator

The OSC organizes, directs, and documents the removal action. Duties include conducting field

Exhibit 4.1-1
Typical Removal Response Actions

Threat Posed	Typical Removal Action Taken
Humans or animals have access to released hazardous substances, fire, or explosion	Installing fences, warning signs, or other security and site control precautions
	Removal of waste materials posing the threat
	Temporarily relocating residents in extreme situations
Precipitation or run-off from other sources (e.g., flooding) may enter the release area	Constructing drainage controls, such as run-off or run-on diversions
Failure of a structure such as a lagoon is likely	Stabilizing berms, dikes, or impoundments
Migration of hazardous substances into soil, ground water, or air is likely	Containing hazardous substances, such as capping contaminated soil or sludge
	Treating hazardous substances, including incineration
	Excavating highly contaminated soil
	Removing drums, barrels, tanks, or other bulk containers containing hazardous substances
Drinking water supply is contaminated	Providing alternate water supplies

Source: Office of Emergency and Remedial Response/Emergency Response Division. 51-013-8C

investigations, on-scene monitoring, and overseeing the removal action. The OSC is also responsible for preparing a final report that describes the site conditions prior to the removal action, the removal action performed at the site, and any problems that occurred during the removal action.

Removal Action Statutory Limits

Removal actions are generally short-term, relatively inexpensive responses to releases or threats of releases that pose a danger to human health, welfare, or the environment. Accordingly, Congress included in CERCLA limitations for removal actions of $2 million and one year for the cost and duration, respectively. Congress established exceptions to these limits, however, under specific circumstances:

- Continued response is required immediately to prevent, limit, or mitigate an emergency; there is an immediate threat to public health, welfare, or the environment; and action cannot otherwise be provided on a timely basis; or
- Continued response action is otherwise appropriate and consistent with the remedial action to be taken.

During FY92, EPA authorized 29 exemptions (ceiling increases) for removal actions to exceed the $2 million limitation. In addition, EPA authorized 10 exemptions to continue removals for more than one year.

4.2 Progress in Addressing Immediate Threats

Cumulatively, since the inception of Superfund, the Agency and PRPs have begun more than 3,040 removal actions at NPL and non-NPL sites to address immediate threats to human health, welfare, or the environment posed by releases or potential releases of hazardous substances. Under the Superfund Accelerated Clean-Up Model (SACM), the Agency will expand its use of removal actions to expedite response, especially at NPL sites.

4.2.1 Status Report on Removal Actions

Of approximately 380 removal actions begun either by EPA or PRPs in FY92, PRPs financed nearly 100 and EPA financed more than 280. The removal actions started by PRPs included 30 at NPL sites and 70 at non-NPL sites. EPA started 30 removal actions at NPL sites and 250 at non-NPL sites. Exhibit 4.2-1 compares the number of removal actions started by EPA and PRPs in FY91 and FY92.

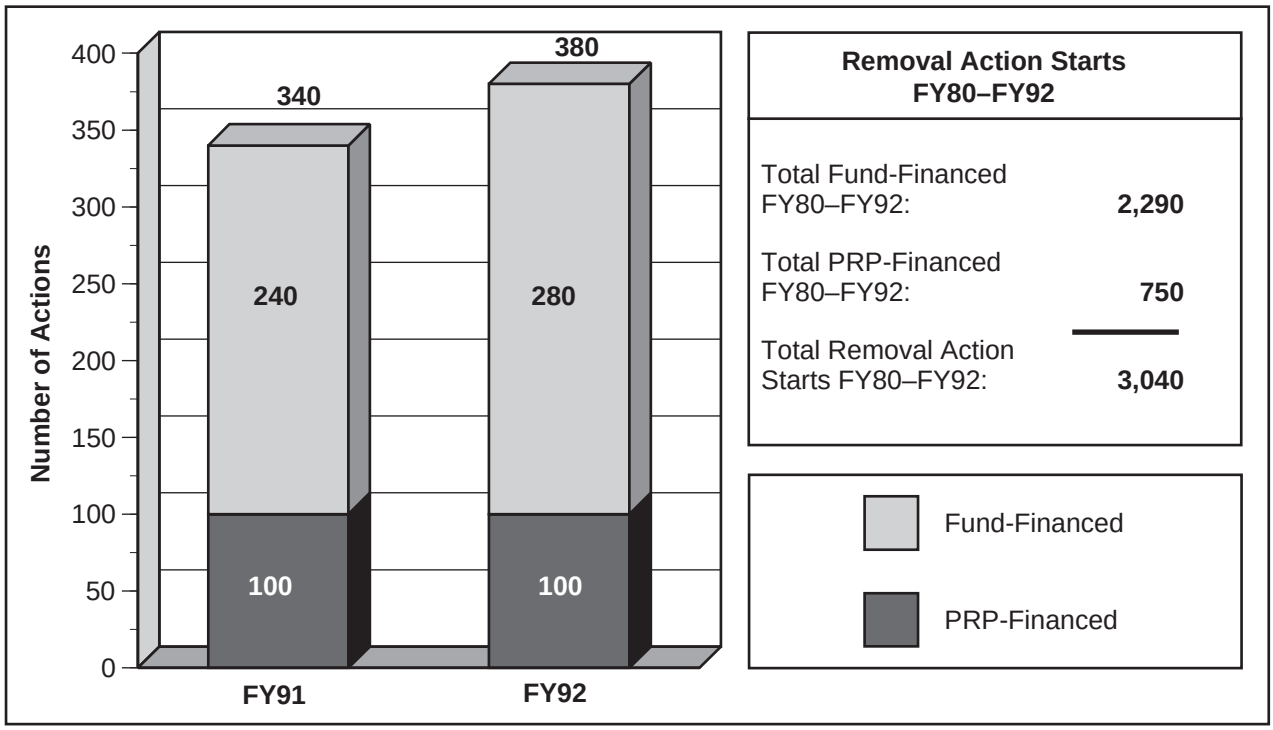
EPA and PRPs completed more than 340 removal actions during FY92. PRPs funded 70 of the 340 completed removal actions, including 20 at NPL sites and 50 at non-NPL sites. EPA funded 270 of the total, including 40 at NPL sites and 230 at non-NPL sites. Exhibit 4.2-2 compares the number of removal actions completed by EPA and PRPs in FY91 and FY92.

Removal actions that have started but have not reached completion are considered "ongoing." Ongoing removal actions include actions that have been in progress less than 12 months and removal actions that have continued for more than 12 months under exemptions from the statutory one-year duration limit. Sites where a removal action has taken place but the contaminants have not yet been transported to a disposal facility are also defined as sites with ongoing removal actions.

4.2.2 Expanding the Use of Removal Authority

Expanding the use of removal authority for "early actions" to reduce immediate risks more rapidly and expedite cleanups at NPL sites is a key element of SACM. As an incentive to pilot this approach during FY92, the Agency set aside $50 million in the remedial action budget to fund early actions. Early actions can be emergency, time-critical, or non-time-critical removal actions or rapid remedial responses.

Exhibit 4.2-1
Removal Action Starts



Source: CERCLIS; Office of Emergency and Remedial Response.

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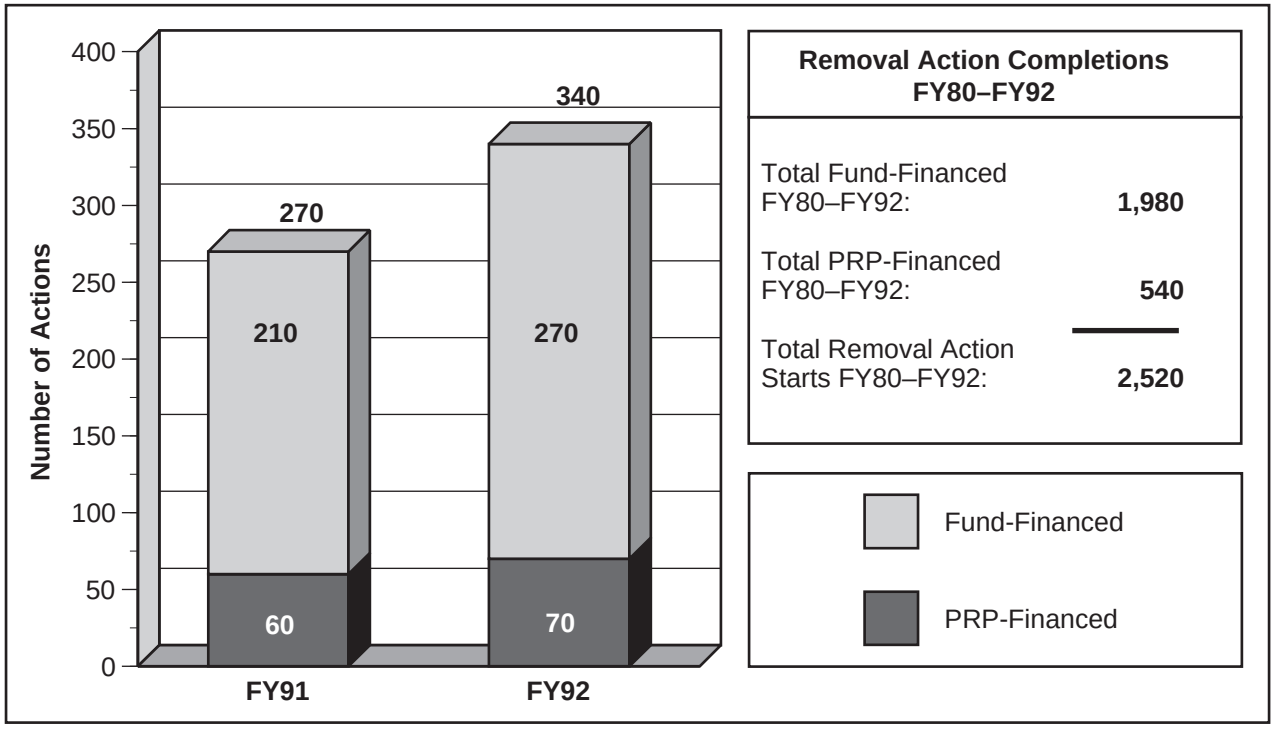
Although the set-aside program was not announced until February 20, 1992, the Agency allocated more than $37 million of the set-aside money for early actions at 13 sites in 7 Regions, including 8 NPL sites. All of the clean-up actions funded were time-critical removals with the exception of one rapid remedial response in Region 1. The funding for early actions did not replace normally used Regional removal funds, but allowed Regions to initiate additional actions. The set-aside funding and the use of remedial funding directly under the Emergency and Rapid Response Services (ERRS) contracts significantly enhanced the Agency's ability to expedite overall response at the NPL sites. Additional information on SACM and the use of removal authority to conduct early actions is provided in Chapter 1.

Due to the success of the early action approach, the Agency will set aside an additional $50 million for early actions in FY93. To further facilitate early actions, EPA's Emergency Response Division will work with the Regional offices and the Office of Acquisition Management to eliminate obstacles posed by limited capacity and funding under ERRS.

An example of an early action at an NPL site is the SACM pilot at the National Zinc Site in Bartlesville, Oklahoma. On August 5, 1992, the Agency initiated phase one of a removal action at the site to excavate lead- and cadmium-contaminated soil. The phase one removal action, which is expected to take 12 months and cost approximately $2.5 million, will address 29 high access public areas including schools, day care centers, parks, playgrounds, and recreation areas in the vicinity of several historic smelter operations. The action will also address residences where testing indicates that children had high levels of lead in their blood, or where lead or cadmium levels detected in soil exceeded action levels. During the removal action, contaminated soil with lead levels greater than 500

Exhibit 4.2-2
Removal Action Completions



Source: CERCLIS; Office of Emergency and Remedial Response.

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parts per million (ppm) and cadmium levels greater than 30 ppm will be excavated and disposed of at an approved hazardous waste facility. The excavated areas will be backfilled with clean soil. This action will be consistent with the overall remediation of the site and will address near-term threats to public health, welfare, or the environment.

4.3 Environmental Response Team

As part of the removal program required by the National Oil and Hazardous Substances Pollution Contingency Plan, EPA manages ERT. Over its 11 years of service, this team of EPA experts has been available to OSCs and Remedial Project Managers to support removal and remedial actions 24 hours a day, 365 days a year. In addition to its response support, ERT provides introductory- and intermediate-level training courses in health and safety and other technical aspects of response. ERT provides expertise in emergency response, hazard assessment, health and safety, air monitoring, alternative and innovative technology, site investigation, ecological damage assessment, clean-up contractor management, and oil and chemical spill control.

During FY92, ERT responded to 102 removal actions, 61 remedial actions, 5 oil spills, and 2 international incidents. ERT also offered 227 training courses nationwide.

4.4 Emergency Response Guidance and Rulemaking

During FY92, the Agency continued updating the *Superfund Removal Procedures Manual*. Under the reportable quantity (RQ) regulatory program, the

Agency proposed adjustments to RQs, completed the report of the EPA Hazardous Substances Task Force, and issued a directive regarding release of ethlene glycol in airplane de-icing operations.

4.4.1 Superfund Removal Procedures Manual

The *Superfund Removal Procedures Manual* covers all procedural and administrative requirements for removal actions. The manual is used by OSCs, other removal personnel, remedial program staff, enforcement personnel, and staff from other federal and state agencies. In FY90, EPA began restructuring the manual into a series of 10 stand-alone volumes, each addressing distinct aspects of Superfund removal actions. In FY92, EPA completed the third and fourth volumes of the series: *Removal Enforcement Guidance for On-Scene Coordinators* and *Public Participation Guidance for On-Scene Coordinators: Community Relations and the Administrative Record.* The remaining six volumes of the manual were under development as of the end of FY92.

4.4.2 Reportable Quantity Regulatory Program

Section 102(b) of CERCLA, as amended, sets an RQ of one pound for hazardous substances, except those substances for which different RQs have been established pursuant to Section 311(b)(4) of the Clean Water Act. Section 102(a) of CERCLA authorizes EPA to adjust RQs for hazardous substances and to designate additional CERCLA hazardous substances.

Under CERCLA Section 103(a), the person in charge of a vessel or facility must immediately notify the National Response Center upon learning of a release of a hazardous substance in a quantity that is equal to or exceeds its RQ. In addition to these reporting requirements, Section 304 of the Emergency Planning and Community Right-to-Know Act of 1986 requires that a release of a hazardous substance in quantities equal to or exceeding its RQ (or one pound if a reporting trigger is not established by regulation) be reported to state and local authorities.

Reportable Quantity Adjustments

EPA proposed RQ adjustments for 31 hazardous substances in a May 8, 1992, rule (57 *FR* 20014). These 31 substances include the following chemicals:

- Lead metal;
- Thirteen lead compounds;
- Fifteen lead-containing hazardous wastes listed under the Resource Conservation and Recovery Act (RCRA);
- RCRA characteristic wastes that fail the Toxicity Characteristic Leaching Procedure ("TC wastes") based on their lead constituents; and
- Methyl isocyanate (MIC).

The RQ adjustments for lead and lead compounds are based on the neurotoxic effects of lead in children. The potential adverse reproductive and respiratory effects of MIC resulted in the RQ adjustment for MIC. Also during the fiscal year, EPA began preparing responses to public comments received on the proposed RQ adjustments.

The Hazardous Substance Task Force Report

In April 1992, EPA completed the report of the EPA Hazardous Substances Task Force. Following the release of 19,500 gallons of the herbicide metam sodium into the Sacramento River on July 14, 1991, Congress requested that EPA identify and address gaps in the regulation of hazardous chemicals like metam sodium. The task force was charged with

- Examining the issues associated with expansion of the CERCLA hazardous substance list;
- Suggesting additional criteria to identify environmentally hazardous materials to be regulated in transportation; and
- Identifying innovative approaches beyond EPA's traditional regulatory framework that would enhance the protection of human health and the environment.

Other Efforts

The Agency issued a directive (Office of Solid Waste and Emergency Response Directive 9360.4-12) on February 4, 1992, concerning releases of ethylene glycol from airplane de-icing operations. Ethylene glycol is a CERCLA hazardous substance by virtue of its listing as a hazardous air pollutant under the Clean Air Act Amendments of 1990. The Agency issued the directive in response to airline industry concerns about CERCLA reporting requirements for releases during de-icing that exceed the RQ for ethylene glycol. The directive stated EPA's position on the applicability of the federally permitted release exemption and the continuous release reporting regulation.